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A method for embossing a fibrous web containing contaminants to improve the bulk and softness of the web by passing the web through a nip formed by a pair of rotating rollers, wherein the contaminants will not damage the rollers, the method comprising:

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a) providing a first embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;

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b) providing a second embossing roll having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roll;

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c) wherein one of said first and second embossing rollers has a Shore A hardness of 40-65 and the other roller has a Shore A hardness of at least about 90; and

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d) placing the rolls in contact to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; and passing a fibrous web through the nip formed by the rolls to emboss the web wherein the roller having the Shore A hardness of 40-65 will deform if any contaminants are encountered in the fibrous web.

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2. The method of claim 1, wherein the step of providing a second roller includes utilizing a laser to form the recesses in the second roll, by removing portions

of the material from the outer surface.

- 3. The method of claim 1, wherein the roller having a Shore A hardness of 40-65 comprises material selected from the group consisting of natural rubber, synthetic rubber and plastic.
- 4. The method of claim 1, wherein the roller having a Shore A hardness of at least about 90 is constructed of steel.

Apparatus for embossing a fibrous web containing contaminants so that the contaminants will not damage the rollers, comprising:

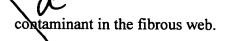
a first rotating embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;

- b) a second rotating embossing roller having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roller;
- c) wherein one of said first and second embossing rollers have differing hardnesses; and
- d) wherein the first and second rollers are disposed to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; to permit the fibrous web thermoplastic through the nip formed by the rollers, wherein the roller having the lesser hardness will deform upon contact with a

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- 6. The apparatus as claimed in claim 5 wherein one of said first and second embossing rollers has a Shore hardness of 40-65 and the other roller has a Shore A hardness of at least about 95.
- 7. The apparatus as claimed in claim 6 wherein the roller having a Shore A hardness of at least about 95 is constructed of steel.
- 10 8. The apparatus as claimed in claim 6 wherein the roller having a Shore A hardness of 40-65 comprises material selected from the group consisting of natural rubber, synthetic rubber and plastic.
 - 9. The apparatus as claimed in claim 5 wherein one of said first and second embossing rollers has a Shore A hardness of about 60-65.

A method to update paper embossing machinery having matched pairs of embossing rollers to enable the machinery to accommodate pulp that may contain contaminants, comprising the steps of:

- a) providing a embossing roller comprising material having a Shore A hardness of 40-65;
- b) utilizing one of each pair of embossing rollers to produce a matched opposite roller from the embossing roller of material having a Shore A hardness of 40-65; and
- c) replacing one of each matched pair of embossing rollers with the roller

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produced from material having a Shore A hardness of 40-65.

- 11. The method of claim 10, wherein the step of producing a matched roller includes utilizing a laser to removing portions of the material from the outer surface of the roller produced from material having a Shore A hardness of 40-65.
- 12. The method of claim 10, wherein the roller having a Shore A hardness of 40-65 comprises material selected from the group consisting of natural rubber, synthetic rubber and plastic.

A method for embossing a fibrous web containing contaminants to improve the bulk and softness of the web by passing the web through a nip formed by a pair of rotating rollers, wherein the contaminants will not damage the rollers, the method comprising:

a) providing a first embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;

b) providing a second embossing roll having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roll;

c) wherein at least one of said first and second embossing rollers is a laser engraved roller and has a Shore A hardness of from about 40 to about 95; and

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placing the rolls in contact to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; and passing a fibrous web through the nip formed by the rolls to emboss the web wherein the roller having the Shore A hardness of from about 40 to about 95 will deform if any contaminants are encountered in the fibrous web.

14. The method according to claim 13, wherein at least one of said first and second embossing rollers is a laser engraved embossing roller having a Shore A hardness of from about 40 to about 85.

15. The method according to claim 14, wherein at least one of said first and second embossing rollers is a laser engraved embossing roller having a Shore A hardness of from about 40 to about 75.

16. The method according to claim 15, wherein at least one of said first and second embossing rollers is a laser engraved embossing roller having a Shore A hardness of from about 40 to about 65.

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